

# Food intake and time budget in rose-ringed parakeets (*Psittacula krameri*) fed an extruded pellet diet or sunflower seeds *ad libitum*.

Kalmar I.D.<sup>1</sup>, Janssens G.P.J.<sup>1</sup>, Carrera Gracey C.<sup>1</sup>, Antonissen G.J.S.<sup>1</sup>, Martel A.<sup>2</sup>, Werquin G.<sup>3</sup>, Moons C.P.H.<sup>1</sup>

<sup>1</sup>Department of Nutrition, Genetics and Ethology, Faculty of Veterinary Medicine, Ghent University, Heidestraat 19, B-9820 Merelbeke

<sup>2</sup>Department of Pathology, Bacteriology and Poultry Diseases, Faculty of Veterinary Medicine, Ghent University, Salisburylaan 133, B-9820 Merelbeke, Belgium

<sup>3</sup>Versele-Laga Ltd., Kapellestraat 70, B-9800 Deinze, Belgium

## Introduction

Seed mixtures are generally perceived as a natural diet for true psittacine birds (Psittacidae). However, typical seeds incorporated into commercial seed mixtures do not represent the food items for which wild parrots naturally forage. Most cultivated seeds either do not originate from the native habitats of parrots, e.g. sunflower seed, or would be impossible to harvest by parrots, e.g. pumpkin seed and peanuts. Moreover, although true parrots are classified as seed-eaters, their natural diet consists of a wide variety of plant parts, insects and larvae and is not limited to ripe seeds and nuts. Besides this misconception of seed mixtures being a natural diet for parrots, the edible part of those feed types is inherently deficient in several essential nutrients. In addition, a multi-component diet enables selective feeding, through which nutritional deficiencies and imbalances are further aggravated. The nutrient composition in pellet diets, on the contrary, can be formulated to meet available guidelines on nutrient requirements, and is not biased by selective feeding. Then again, some reservations exist against pellets as this type of diet is often presumed to reduce the time budget spent on feeding. Hence, arising boredom and denial of the natural feeding behaviour, which includes manipulation with feet and beak to dehusk food items, is suspected to attribute to overfeeding and aberrant behaviour, such as feather picking. The aim of the current trial is to investigate these reservations by quantifying time budget and voluntary feed intake when parrots are fed a pellet diet or sunflower seeds *ad libitum*.

## Materials and Methods

Eight adult rose-ringed parakeets (*Psittacula krameri*) were housed individually in indoor wire cages and were allowed visual and auditory contact with each other. Four cameras and 8 infrared lights were installed in the animal room for the entire trial. Lighting period was determined by sunlight. Two diets with which the birds were well acquainted, sunflower seed and pellets (Nutribird P15, Versele Laga Ltd.), were fed *ad libitum* in a 2×2 cross-over design with 14-day periods. After a 12-day adaptation period, time budget was assessed using continuous video-recording for 48-hours. During this 2-day recording period, food and water intake were assessed with minimal disturbance to the birds. Disturbance due to human presence in the animal room was accounted for in the video analysis.

## Results

Daily intake of pellets ( $11 \pm 1$  g/d) was significantly higher compared to sunflower seed kernels ( $8 \pm 1$  g/d) ( $p=0.001$ ). Still, energy intake was only  $175 \pm 18$  kJ/d when fed pellets, but  $213 \pm 28$  kJ/d when fed sunflower seed ( $p=0.020$ ), as energetic density was 1547 kJ/100 g and 2810 kJ/100 g in respective diets. Daily water intake was comparable between both test diets. Data on time budget were incomplete at the time of submission.

**Conclusion**

These preliminary data contradict overfeeding due to boredom when fed pellet diets, as daily energy intake was not higher compared to feeding sunflower seed. Moreover, voluntary energy intake was even 18% higher when fed sunflower seeds.